AMENDMENTS TO THE CLAIMS

Claims 1-6 (Canceled)

7. (Currently Amended) A method of identifying a subject ~~in need of treatment or prevention of~~ as likely to develop or have Alzheimer's disease~~, Parkinson's disease~~ or Mild Cognitive Impairment (MCI), comprising:

obtaining a biological sample having peripheral blood cells from said subject, said sample having protein;

providing a probe that interacts with a wild type iron-regulatory protein-2 (IRP-2) (SEQ ID NO:18) or mutant ~~iron regulatory protein 2 (~~IRP-2~~) protein (SEQ ID NO:18)~~;

contacting the biological sample with the probe under conditions that allow the probe to interact with the protein in the biological sample;

~~detecting the amount of probe that interacts with the protein in the biological sample;~~ and

identifying the subject as ~~a subject in need of treatment or prevention of~~ likely to develop or have Alzheimer's disease~~, Parkinson's disease~~ or MCI, by detecting more probe that interacts with the protein in the biological sample than would be detected ~~determining the presence of an amount significantly greater than that identified~~ in a control sample.

8. (Original) The method of Claim 7, wherein the probe is selected from the group consisting of a nucleic acid, a protein, and a peptidomimetic.

9. (Currently Amended) The method of Claim 7, wherein the detection of the amount of probe that interacts with the ~~polynucleotide or~~ protein comprises use of a technique selected from the group consisting of fluorescence-activated cell sorting (FACs), immunoprecipitation, Western blot, immunochromatography, antibody staining, and a hybridization assay.

Claims 10-20 (Cancelled)

NEW CLAIMS

21. **(New)** A method for the identification of a defect in iron metabolism in a patient, comprising:

obtaining a biological sample having peripheral blood cells from said subject, said sample having protein;

providing a probe-that interacts with a wild type iron regulatory protein 2 (IRP-2) (SEQ ID NO:18) or mutant IRP-2 protein;

contacting the biological sample with the probe under conditions that allow the probe to interact with the protein in the biological sample;

identifying the subject as having a defect in iron metabolism by detecting less or more probe that interacts with the protein in the biological sample than would be detected in a control sample.